

REMARKS/ARGUMENTS

Reconsideration and withdrawal of the rejections set forth in the Office Action dated June 7, 2007, is respectfully requested in view of this amendment. By this amendment, claims 1, 11, 18 and 20, have been amended, and new claims 21-24 have been inserted. Claims 1-24 are pending in this application.

Amended claims 1, 11, 18 and 20 now describe the three dimensional representation as suitably coded so that said displayed image appears as a three dimensional virtual image when said displayed image is viewed via a suitable optical arrangement. Support is found in the Specification, including at Standard Paragraph [0006]. New claims 21-24 describe three dimensional representation is color-coded, and said optical arrangement comprises suitably colored lenses. Support is found in the Specification, also at Standard Paragraph [0006]. It is respectfully submitted that the above amendments introduce no new matter within the meaning of 35 U.S.C. §132.

In the outstanding Office Action, the Examiner rejected claims 1 – 20 under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement. Claims 1-20 were rejected under 35 U.S.C. §103(a). The art rejections included rejection of claims 1-6, 9, 11, 12 and 14-18 as being unpatentable over WO 99/16380 to Taub et al. (hereinafter referred to as "*Taub '380*") in view of U.S. Patent No. 6,152,731 to Jordan et al. (hereinafter referred to as "*Jordan*"). Claims 7 and 13 were rejected over *Taub '380*, in view of *Jordan*, taken further in view of U.S. Patent No. 6,413,083 to *Hamilton*. Claims 8 and 10 were rejected over *Taub '380*, in view of *Jordan*, taken further in view of WO 99/34747 to Taub (hereinafter referred to as "*Taub '747*") and U.S. Patent No. 6,227,850 to Chishti et al. (hereinafter referred to as "*Chishti*"). Claim 19 and 20 were rejected over *Taub '380* in view of *Jordan*, *Taub '747*, taken further in view of U.S. Patent No. 6,350,120 to Sachdeva et al. (hereinafter referred to as "*Sachdeva*").

Rejections Under 35 U.S.C. §112, First Paragraph

The Examiner rejected claims 1 – 20 as containing new matter. Specifically, the Examiner notes that the phrase "exclusively" with reference to the virtual image is not found in the original specification.

Response

By this Response and Amendment, Applicants cancelled the term, "exclusively" in claims 1, 11, 18 and 20. It is noted that the representation of the virtual image remains part of the display. Thus it is clear that the displayed image is derived only from the virtual representation. Accordingly, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. §112, first paragraph.

Rejections Under 35 U.S.C. §103(a)

The rejections under 35 U.S.C. §103(a) are traversed as follows. To establish a *prima facie* case of obviousness, the Examiner must establish: (1) some suggestion or motivation to modify the references exists; (2) a reasonable expectation of success; and (3) the prior art references teach or suggest all of the claim limitations. *Amgen, Inc. v. Chugai Pharm. Co.*, 18 USPQ2d 1016, 1023 (Fed. Cir. 1991); *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970).

Claims 1-6, 9, 11, 12 and 14-18

The Examiner rejected claims 1 – 6, 9, 11, 12 and 14 – 18 as unpatentable over *Taub '380* in view of *Jordan*.

Response

By this Response and Amendment, Applicants respectfully traverse the Examiner's rejection, since the combination of prior art references does not disclose, teach or suggest all of the features of the independent claims of the present application.

Independent claims 1, 11, 18 and 20 set forth:

"... processing [a] virtual representation ... driving a display to display virtual image ... having three-dimensional qualities indicative of [a] tooth as viewed from a defined viewpoint, wherein said three dimensional representation is suitably coded so that said displayed image appears as a three dimensional virtual image when said displayed image is viewed via a suitable optical arrangement" (Claim 1; claims 11, 18 and 20 similar.)

Taub '380 discloses a device for providing guidance information for an intended position of a real orthodontic element on a tooth's surface and simultaneously positioning the element on the tooth's surface according to the intended position. Rather than perform a virtual procedure, the *Taub '380* device requires the use of a positioning device 20 for placing a bracket on a tooth. The bracket 20 includes a camera 26 (or other imaging device) mounted on a mount.

Jordan discloses a method of creating a three-dimensional dental model. The instrument is held by a dentist and used to apply a bracket on a tooth using the real image displayed on the computer.

In contrast to the presently claimed invention the cited prior art combination does not disclose, teach or suggest Applicants' claimed "three dimensional representation is suitably coded so that said displayed image appears as a three dimensional virtual image when said displayed image is viewed via a suitable optical arrangement". (See independent claims 1, 11, 18 and 20.)

The Examiner states that exclusively using just the virtual images in *Taub '380* is a matter of choice; however *Taub '380* specifically acquires a real-life image of the tooth. The real-life tooth is compared with other elements. The output is displayed with a real-life image of the tooth. Therefore, *Taub '380* requires acquiring and displaying the real life image. This clearly "teaches away from" Applicants' claimed invention.

There is no suggestion in the cited references to implement *Taub '380* to provide a virtual image showing 3D attributes. *Taub '380* is directed to, and specifies obtaining a real life image of the tooth and comparing this to a virtual image or indicators superimposed with the virtual image until the two coincide. This is done in real time, requiring a relatively simple virtual image which may be manipulated. (see *Taub '380* at pg. 6, line 2.) In contrast, Applicants use 3D attributes in lieu of the real life image:

"... said three dimensional representation is suitably coded so that said displayed image appears as a three dimensional virtual image when said displayed image is viewed via a suitable optical arrangement" (Claims 1, 11, 18 and 20.)

The cited prior art combination therefore fails to show or suggest Applicants' invention as set forth in claims 1, 11, 18 and 20. It is therefore respectfully submitted that the rejection under 35 U.S.C. 103(a) should be withdrawn.

Dependent Claims 2–6, 9, 11, 12 and 14–17

Similarly, as dependent claims necessarily recite all of the features of the independent claim from which they depend, claims 2–6, 9, 11, 12 and 14–17 are asserted to be patentable over the cited prior art combination for at least the same reasons as their respective independent claims. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection under 35 U.S.C. §103(a).

Claims 7 and 13

Claims 7 and 13 were rejected over *Taub '380*, in view of *Jordan*, taken further in view of U.S. Patent No. 6,413,083 to *Hamilton*. This rejection, as applied to the amended claims, is respectfully traversed.

Hamilton is cited as showing the use of a printer. Since the subject matter as set forth in independent claims 1 and 11 are neither shown nor suggested by the combination of *Taub '380* and *Jordan*, the use of a printer would not in itself be suggestive of the present invention.

Hamilton also describes a computerized system for diagnosing a tooth-size discrepancy and recommending an ideal arch size based on the size of an individual patient's teeth. There is no suggestion in this regard of the use of the virtual image as set forth in Applicants' independent claims 1 and 11.

The cited prior art combination therefore fails to show or suggest Applicants' invention as set forth in claims 7 and 13. It is therefore respectfully submitted that the rejection under 35 U.S.C. 103(a) should be withdrawn.

Claims 8 and 10

Claims 8 and 10 were rejected over *Taub '380*, in view of *Jordan*, taken further in view of *Taub '747* and *Chishti*. *Taub '747* is not particularly described in its applicability to the claims. *Chishti* is used to show the use of communications to a remote location.

In order to transmit information to a remote location, it would be necessary for the information to be generated in the first place. There is no suggestion in the cited combination to generate such data.

The cited prior art combination therefore fails to show or suggest Applicants' invention as set forth in claims 8 and 10. It is therefore respectfully submitted that the rejection under 35 U.S.C. 103(a) should be withdrawn.

Claims 19 and 20

Claims 19 and 20 were separately rejected over *Taub '380* in view of *Jordan*, *Taub '747*, taken further in view of *Sachdeva*. *Taub '747* is not particularly described in its applicability to the claims. *Sachdeva* was cited as showing a library of virtual brackets.

The combination fails to suggest the creation of the virtual images as set forth by Applicants. As such, the addition of *Taub '747* and *Sachdeva* to the combination of *Taub '380* and *Jordan* does not render independent claims 1, 11 and 18 obvious, so dependent claims 19 and 20 are unobvious for at least the same reasons as claims 1, 11 and 18.

The cited prior art combination therefore fails to show or suggest Applicants' invention as set forth in claims 19 and 20. It is therefore respectfully submitted that the rejection under 35 U.S.C. 103(a) should be withdrawn.

INFORMATION DISCLOSURE

Applicants submits an Information Disclosure Form to include citations of US 6,334,853 and US provisional application 60/288,522. Both documents are described in the Specification, at Standard Paragraph [0009], and are therefore of record in the present case.

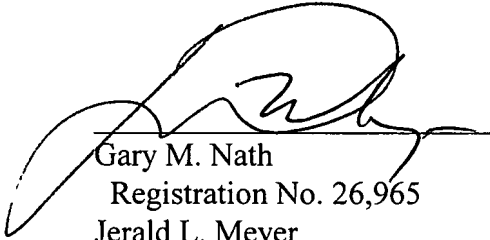
CONCLUSION

In light of the foregoing, Applicants submit that the application is in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicants respectfully request that the Examiner call the undersigned.

Respectfully submitted,
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